IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered). Please AMEND claims 1 and 11-22 and ADD new claim 29 in accordance with the following:

1. (currently amended) A~~An~~ transmission apparatus for use in a radio communication system wherein the transmission apparatus communicates with a reception~~another~~ apparatus through a radio channel, comprising:

monitoring means for monitoring whether or not a transmission request for data, designating the transmission~~particular~~ apparatus itself as a transmission destination, has been issued by said ~~particular~~ apparatus or the other apparatus connected thereto through a network; *(handwritten: transmission)*

generation means for generating and initiating a process in the transmission apparatus to serve as a logical reception destination for the data and generating a buffer in correspondence with the process, when said monitoring means has detected the issue of the transmission request;

transfer means for transferring the data from a transmission request source to said process in accordance with communications of an internal virtual circuit type, so as to store in the buffer the data transmitted by the transmission request source; and

transmission means for transmitting the data stored in said buffer, to said other apparatus through the radio channel.

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2. (original) An apparatus for use in a radio communication system as defined in claim 1, wherein said transmission means transmits transmission destination information to be designated, in accordance with a protocol of an upper layer with respect to layers of said radio channel.

3. (original) An apparatus for use in a radio communication system as defined in claim 1, further comprising:

detection means for detecting a data storing state of said buffer;

wherein said transfer means controls a communication speed of the virtual circuit type

communications in accordance with a detected result of said detection means.

4. (original) An apparatus for use in a radio communication system as defined in claim 2, further comprising:

detection means for detecting a data storing state of said buffer;

wherein said transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of said detection means.

5. (original) An apparatus for use in a radio communication system as defined in claim 1, further comprising:

specification means for specifying a sequence number of the transmission data at a point of time of the disconnection, when said radio channel has been disconnected;

wherein said transmission means restarts the data transmission from said data of the sequence number specified by said specification means, when said radio channel has been re-connected.

6. (original) An apparatus for use in a radio communication system as defined in claim 2, further comprising:

specification means for specifying a sequence number of the transmission data at a point of time of the disconnection, when said radio channel has been disconnected;

wherein said transmission means restarts the data transmission from said data of the sequence number specified by said specification means, when said radio channel has been re-connected.

7. (original) An apparatus for use in a radio communication system as defined in claim 3, further comprising:

specification means for specifying a sequence number of the transmission data at a point of time of the disconnection, when said radio channel has been disconnected;

wherein said transmission means restarts the data transmission from said data of the sequence number specified by said specification means, when said radio channel has been re-connected.

8. (original) An apparatus for use in a radio communication system as defined in claim 4, further comprising:

specification means for specifying a sequence number of the transmission data at a point of time of the disconnection, when said radio channel has been disconnected;

wherein said transmission means restarts the data transmission from said data of the sequence number specified by said specification means, when said radio channel has been re-connected.

9. (original) An apparatus for use in a radio communication system as defined in claim 1, wherein when a plurality of such buffers are generated by said generation means, said transmission means reads out data successively from the buffers of higher priority levels in accordance with priority levels set for the respective buffers and transmits the read data.

10. (original) An apparatus for use in a radio communication system as defined in claim 1, wherein when a plurality of such buffers are generated by said generation means, said transmission means transmits data while setting transmission cycles of the data stored in the buffers of higher priority levels, shorter in accordance with priority levels set for the respective buffers.

11. (currently amended) An apparatus for use in a radio communication system ~~as defined in claim 1, further comprising:~~ wherein the apparatus communicates with another apparatus through a radio channel, said apparatus comprising:

monitoring means for monitoring whether or not a transmission request for data, designating the ~~particular~~ transmission apparatus itself as a transmission destination, has been issued by said ~~particular~~ transmission apparatus or the other apparatus connected thereto through a network;

generation means for generating a process to serve as a reception destination for the data and generating a buffer in correspondence with the process, when said monitoring means has detected the issue of the transmission request;

transfer means for transferring the data from a transmission request source to said process in accordance with communications of virtual circuit type, so as to store in the buffer the data transmitted by the transmission request source;

transmission means for transmitting the data stored in said buffer, to said other apparatus through the radio channel;

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a cache memory which stores therein data sent back in response to the data transmission of said transmission means; and

search means for searching as to whether or not data requested by said transmission request source is registered in said cache memory;

wherein when the registration of the requested data in said cache memory has been detected by said search means, said process transfers said requested data in said cache memory, to said transmission request source through said transfer means.

12. (currently amended) AnA reception apparatus for use in a radio communication system wherein the reception apparatus communicates with a transmission another apparatus through a radio channel, comprising:

reception means for receiving data sent in through the radio channel;

monitoring means for monitoring whether or not said reception means has received data which conforms to a protocol suspended in layers of said radio channel;
associated with

generation means for generating and initiating a process in the reception apparatus to serve as a logical reception destination for the data, when said monitoring means has detected the reception of the pertinent data; and

transfer means for transferring the data received by the process, to a transmission request destination in accordance with communications of an internal virtual circuit type.

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13. (currently amended) An apparatus for use in a radio communication system as defined in claim 12, further comprising:wherein the apparatus communicates with another apparatus through a radio channel, said apparatus comprising:

reception means for receiving data sent in through the radio channel;

monitoring means for monitoring whether or not said reception means has received data which conforms to a protocol suspended in layers of said radio channel;
associated with

generation means for generating a process to serve as a reception destination for the data, when said monitoring means has detected the reception of the pertinent data;

transfer means for transferring the data received by the process, to a transmission request destination in accordance with communications of virtual circuit type

a cache memory which stores therein data sent back from the transmission request destination in response to the data transfer of said transfer means; and

search means for searching as to whether or not data requested by the data sent in

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through said radio channel is registered in said cache memory; and

transmission means for transmitting said requested data in said cache memory, to said transmission request source through said radio channel, when the registration of the requested data in said cache memory has been detected by said search means.

14. (currently amended) A program recording medium storing therein programs which are employed for incarnating ~~an~~ a transmission apparatus for use in a radio communication system wherein the transmission apparatus communicates with ~~another~~ a reception apparatus through a radio channel, the programs causing a computer to execute processing comprising:

monitoring whether or not a transmission request for data, which designates the transmission~~particular~~ apparatus itself as a transmission destination, has been issued by said ~~transmission~~ ~~particular~~ apparatus or the other apparatus connected thereto through a network;

generating and initiating a process in the transmission apparatus to serve as a logical reception destination for the data and also generating a buffer in correspondence with the process, when the monitoring step has detected the issue of the transmission request;

transferring the data from a transmission request source to said process in accordance with communications of an internal virtual circuit type, so as to store in the buffer the data transmitted by the transmission request source; and

transmitting the data stored in said buffer, to said other apparatus through the radio channel.

15. (currently amended) A program recording medium storing therein programs which are employed for incarnating a reception~~an~~ apparatus for use in a radio communication system wherein the reception apparatus communicates with a transmission~~another~~ apparatus through a radio channel, the programs causing a computer to execute processing comprising:

receiving data sent in through the radio channel;

monitoring whether or not the receiving step has received data which conforms to a protocol ~~suspended in~~ associated with layers of said radio channel;

generating and initiating a process in the reception apparatus to serve as logical a reception destination for the data, when the monitoring step has detected the reception of the pertinent data; and

transferring the data received by the process, to a transmission request destination in accordance with communications of an internal virtual circuit type.

16. (currently amended) A data communication method for a radio communication system wherein apparatuses communicate through a radio channel, comprising the steps of:

(a) monitoring if a transmission request for data, which designates a particular one of the apparatuses as a transmission destination, has been issued by the particular apparatus or another of said apparatuses connected thereto through a network;

(b) generating and initiating a process in the particular apparatus to serve as a logical reception destination for the data and also generating a buffer in correspondence with the process, when the issue of the transmission request has detected;

(c) transferring the data from a transmission request source to said process in accordance with communications of an internal virtual circuit type, so as to store in the buffer the data transmitted by the transmission request source; and

(d) transmitting the data stored in said buffer, to said other apparatus through the radio channel.

17. (currently amended) A data communication method as defined in Claim 16, wherein in step (d), transmission destination information to be designated is transmitted in accordance with a protocol of an upper layer with respect to layers of said radio channel.

18. (currently amended) A data communication method as defined in Claim 16, further comprising the step of:

(e) detecting a data storing state of said buffer;

wherein in step (c), a communication speed of the virtual circuit type communications is controlled in accordance with a result of the detection.

19. (currently amended) A data communication method as defined in Claim 16, further comprising the step of:

(f) specifying a sequence number of the transmission data at a point of time of disconnection when said radio channel has been disconnected;

wherein in step (d), the data transmission is restarted from the data of the specified sequence number when said radio channel has been re-connected.

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20. (currently amended) A data communication method as defined in claim 16, wherein when a plurality of such buffers have been generated in ~~step~~-(b), ~~step~~-(d) operates to read out data successively from the buffers of higher priority levels in accordance with priority levels set for the respective buffers, and to transmit the read data.

21. (currently amended) A data communication method as defined in claim 16, wherein when a plurality of such buffers have been generated in ~~step~~-(b), ~~step~~-(d) operates to transmit data stored in the respective buffers while setting transmission cycles of the data stored in said buffers of higher priority levels, shorter in accordance with priority levels set for said respective buffers.

22. (currently amended) A data communication method ~~as defined in claim 16, further comprising the steps of:~~for a radio communication system wherein apparatuses communicate through a radio channel, said method comprising:

(a) monitoring if a transmission request for data, which designates a particular one of the apparatuses as a transmission destination, has been issued by the particular apparatus or another of said apparatuses connected thereto through a network;

(b) generating a process to serve as a reception destination for the data and also generating a buffer in correspondence with the process, when the issue of the transmission request has detected;

(c) transferring the data from a transmission request source to said process in accordance with communications of virtual circuit type, so as to store in the buffer the data transmitted by the transmission request source;

(d) transmitting the data stored in said buffer, to said other apparatus through the radio channel

(g) storing data sent back in response to the data transmission ~~of step~~-(d), in a cache memory;

(h) making a search as to whether data requested by said transmission request source is stored in the cache memory; and

(i) reading the requested data out of said cache memory and transmitting the read data to said transmission request source, when the data requested by said transmission request source is stored in the cache memory.

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23. (previously presented - allowed) A data communication method for a radio communication system wherein apparatuses communicate through a radio channel, comprising:

receiving data sent in through the radio channel;

monitoring whether or not the received data conforms to a protocol suspended in layers *associated with* of said radio channel;

generating a process to serve as a reception destination for the data, when the reception of the data conforming to the protocol has been detected; and

transferring the data received by the process, to a transmission request destination in accordance with communications of virtual circuit type.

24. (previously presented - allowed) A data communication method as defined in claim 23, further comprising:

storing data sent back from the transmission request destination in response to the data transfer, in a cache memory;

making a search as to whether or not data requested by the data received through said radio channel is registered in the cache memory; and

transmitting the requested data in said cache memory, to said transmission request source through said radio channel when said requested data is registered in said cache memory.

25. (previously presented) A data communication method for a radio communication system wherein apparatuses communicate through a radio channel, comprising:

transmitting data requested by a transmission source, in accordance with communications of virtual circuit type by employing a protocol of an upper layer with respect to layers of the radio channel;

transmitting the data transmitted by employing the protocol of the upper layer, through said radio channel by employing a protocol of the layers of said radio channel; and

transmitting the data transmitted by employing said protocol of said layers of said radio channel, to a transmission request destination in accordance with the virtual circuit type communications by employing said protocol of said upper layer with respect to said layers of said radio channel.

26. (previously presented) A radio communication system wherein different apparatuses communicate through a radio channel, comprising:

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a first apparatus comprising:

first communication means for receiving data which is to be transmitted from a transmission request source within a particular one of the different apparatuses to a transmission request destination within another of said different apparatuses in accordance with communications of virtual circuit type by employing a protocol of an upper layer with respect to layers of the radio channel; and

first radio communication means for transmitting data inputted from said first communication means to the other apparatus through said radio channel in accordance with a protocol of the layers of said radio channel; and

a second apparatus comprising:

second radio communication means for receiving the data transmitted in from said first radio communication means through said radio channel in accordance with the protocol of said layers of said radio channel; and

second communication means for transmitting the data received by said second radio communication means, to the transmission request destination within the particular apparatus in accordance with the virtual circuit type communications by employing the protocol of the upper layer with respect to said layers of said radio channel.

27. (previously presented) A radio communication system, comprising:

a client comprising:

first inter-process communication means for transmitting and receiving data which are exchanged between said client and a server, by communications of virtual circuit type in conformity with a protocol of an upper layer with respect to layers of a radio channel; and

first radio communication means for transmitting and receiving the data which are exchanged between said client and said server and which are inputted to and outputted from said first inter-process communication means, between said first radio communication means and said server through said radio channel in conformity with a protocol of the layers of said radio channel;

a gateway comprising:

second radio communication means for transmitting and receiving said data which are exchanged between said client and said server, between said second radio communication means and said first radio communication means

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through said radio channel in conformity with the protocol of said layers of said radio channel; and

second inter-process communication means for transmitting and receiving said data which are exchanged between said client and said server, between said second inter-process communication means and said server through an Internet by the virtual circuit type communications in conformity with the protocol of the upper layer with respect to said layers of said radio channel; and

a server comprising:

third inter-process communication means for transmitting and receiving said data which are exchanged between said client and said server, between said third inter-process communication means and said gateway through said Internet in conformity with said protocol of said upper layer with respect to said layers of said radio channel;

wherein said client and said gateway are connected through said radio channel, and said gateway and said server are connected through said Internet.

28. (original) A radio communication system as defined in claim 27, wherein said client and said gateway are communicatively connected through a public network and a radio communication network.

29. (new) A radio communication method for communicating data between a transmitting apparatus and a receiving apparatus by radio, comprising:

determining whether a data transfer request by a transfer request source exists;

generating and initiating a process in the apparatus to serve as a logical destination for the data responsive to the request;

transferring the data between the transmission request source and the process in accordance with an internal virtual circuit; and

transmitting the data along with a port number and an IP address of a target service through the radio channel communication.